

South Tahoe Public Utility District Urban Water Conservation Grant Application

Part A-4 - Description of Project

South Lake Tahoe Public Utility District serves the incorporated city of South Lake Tahoe and portions of El Dorado County with approximately 13,600 water service connections supplied by 28 domestic wells. In the past six years, the district has lost the service of one-third of its wells due to contamination of Methyl Tertiary Butyl Ether (MTBE). This represented more than 25% of total water production and forced the district to meet summertime demands with a crippled system. Although ongoing efforts to drill new wells and the introduction of water treatment plans have helped the district to meet its service demands, the need for long-term water conservation efforts is of critical importance. The district is also subject to the Porter-Cologne Water Quality Control Act of 1968, water quality legislation enacted to protect Lake Tahoe. This legislation controls many aspects of life in the basin, one of which is the need to establish and maintain vegetation to enhance erosion control efforts required by the Tahoe Regional Planning Agency. In an effort to meet vegetation requirements as well as enhance water conservation efforts, the utility district proposes to partner with the Tahoe Resource Conservation District in a unique, locally-designed program modeled after the "Cash for Grass" program established in North Marin County.

The program would provide incentives for local residents, both commercial and residential, to replace established lawns with drought-resistant and native plants and shrubs. Landowners without current landscaping could also receive incentives to plant water saving vegetation in lieu of grass or sod. Additionally, the promotion of drip irrigation systems by providing 50% of the installation costs would be included. This project would meet a two-fold goal: conserve water by limiting irrigation needs and promote native re-vegetation as a means of enhancing erosion control. Participants could receive up to a maximum of \$750 in rebates and incentives after a pre-and post-inspection of the property has been completed.

The District proposes a three-year grant project in order to establish the program, ensure maximum outreach capabilities, and allow a sufficient amount of time to gather monitoring and evaluation data. In historical data of water consumption by the district, we know our consumption doubles and almost triples through the months of June, July and August. Objectives of this program are: lower the water consumption of .8% of customers (100 annually) by 25% for an annual savings of 16.15 AF; increase consumer awareness of the critical need for water conservation by advertising the program and its results; and reduce the long term need for drilling new domestic wells to meet increased water consumption. We expect to provide approximately 300 customers with incentives to reduce water consumptive landscaping practices during the first three years of the program term. In terms of benefits versus costs, we would spend \$164,401 to save \$216,935 in water costs annually for a ratio of 1.32.

A-5 - Maps

The district does not propose a construction project.

A-6 - Statement of Work Schedule

The following annual work schedule will be followed for all three years of the requested grant period. This work schedule can be repeated with Phase 1 as Year 1, Phase 2 as Year 2 and Phase 3 as Year 3. There will be no changes in the annual work schedule, with the exception of purchases of materials or equipment, which will be a one-time task and expense.

(Please see next 7 pages, #6-12)

A-7 Monitoring and Evaluation

Monitoring and evaluation of this project will be accomplished from two perspectives: evaluation of water savings by annual water use as tracked and evaluated by STPUD and changes in irrigation through the monitoring of the rain gauge and evaluation data from each homeowner provided by TRCD.

STPUD calculates water use and production rates in a variety of methods and for a wide range of periods. For the purpose of monitoring this project, the District would use the calculations for monthly water use and monthly water production during the months of June, July and August. A base monthly water use and production rate would be set for 2002. This would be used as the comparison years in which to evaluate water usage in the three years of the grant period. We can measure in percentage rates of differences in order to see if the goals we set for the program have been met. Our main focus would be on measuring and calculating the unaccounted water (See Attachment A). Each year, these rates will be compared in an effort to evaluate the success of this program. Our goal is to reduce 25% of water usage during these summer months by 8% of customers annually for a total annual water savings of 16.15 AF. As STPUD monitors in standards of MG, these amounts will be recalculated to AF and submitted to the Department of Water Resources in annual reports.

Water savings in landscape irrigation usage will not be affected if homeowners do not change irrigation habits. TRCD will be monitoring homeowner irrigation standards through the utilization of a rain gauge installed on each property at the time of the post-evaluation. From this gauge, we can monitor the precipitation amounts for each landscaped lot in the program. These calculations will be entered into a specific software program that tracks them against natural precipitation for the area. From these calculations, we will be able to advise the homeowner about their current irrigation practices and whether any changes will be necessary. We will provide these reports to both DWR and the homeowner.

A-8 Qualifications of the Applicant and Cooperators

The South Tahoe Public Utility District has been in operation since September 28, 1950 when it was established as a public agency. The district has successfully administered and completed many grant funded water projects in the past and has a 50- year history of outstanding achievement in financial, administrative, and operational roles. The U.S. Environmental Protection Agency (EPA) has awarded the district the national honor of Outstanding Award for Operations and Maintenance twice and the California Water Environment Association (CWEA) named STPUD the 2000 Wastewater Treatment Plant of the Year. In addition, from an administration standpoint, the Government Finance Officers Association honored the District's 2000 CAFR with the Certificate of Achievement for Excellence in Financial Reporting and the same document won the

California Society of Municipal Finance Officers (CSMFO) Award for Outstanding Financial Reporting. The District would bring to this project the same attention to detail and timeliness that it has shown to past projects under its jurisdiction.

Tahoe Resource Conservation District (TRCD) will act as the external cooperator in this project. A Memorandum of Understanding between the two agencies for this project will be submitted upon approval of the grant. The TRCD works in partnership with the USDA/Natural Resources Conservation Service, the Tahoe Regional Planning Agency, the Nevada Tahoe Conservation District, the University of Nevada Cooperative Extension and the Incline Village Waste Not Program to prevent soil erosion and promote Best Management Practices (BMP's). The TRCD has an extensive history of backyard conservation programs management and can bring the expertise of their staff to this program, as well as the expertise of their partners. Currently, the TRCD manages a local Backyard Conservation Program based on a national program developed by the USDA/Natural Resources Conservation Service. This program focuses on homeowners learning to conserve water by planting vegetation to attract wildlife, prevent erosion and add to the aesthetic value of their land. As the TRCD and the District share the same goal of water conservation, we believe a partnership in this innovative grant project would be beneficial to the community. Our combined efforts in terms of outreach, incentives and increasing awareness of water saving landscape practices will help us meet the outcomes as described in A-4 above.

A resume for Jennifer Jespersen, TRCD Project Manager for this project is included with this application as Attachment B.

A-9 Innovation

Water saving landscaping practices are not new, however, the outreach and incentives necessary to obtain commitment to these practices are still a challenge for most communities. Two programs currently in operation that the district plans on incorporating into and expanding on in our local project are described below:

- In the October 2002 Water Conservation News, the Metropolitan Water District of Southern California announced their new long-term program of water conservation that promotes the use of native plants in landscaping. As part of our landscaping pre-inspection, TRCD staff will recommend native plants as part of the landscape plan for each client, but will also provide sample packets of seeds for native wildflowers and grasses free of charge.
- North Marin County has administered their "Cash for Grass" program for approximately three years now and, according to program manager Ryan Grissel, the incentives are the key to the success of the program. Some incentives the county uses are the rebates for turf removal, discounts with local greenhouses and nurseries and a rebate of 50% for installing a drip irrigation system. The District plans on incorporating all of these incentives as well as providing each homeowner with a free rain gauge to be installed as a monitoring tool, not only for this project, but to serve as a tool for the

landowner to develop new irrigation practices. Additionally, we will provide reimbursements for water saving devices to be installed on automatic sprinkler systems as part of the incentive costs.

The pre-and post-inspections that will be included in the District's project are an opportunity to provide landowners with vital information about irrigation practices, local and adaptive plants, precipitation measurements, fertilizer management and to ensure that information regarding local regulations affecting their landscape changes can be addressed.

Our project would combine water conservation and soil erosion reduction, both of which would have a positive impact on the non-point source pollution affecting Lake Tahoe.

A-10 Agency Authority

1. Richard Solbrig, Assistant Manager/Engineer and official signing A-2, Signature Page for this proposal, does have the legal authority provided by the Board of Directors to submit an application for funding by the state. A board resolution providing this authority is included as Attachment C with this application.
2. The South Tahoe Public Utility District is a publicly-held corporation authorized to operate pursuant to the provisions of Section 9 of the "Public Utility District Act", as amended, (Act 6391 of Deering's General Laws) in the State of California
3. The District is NOT required to hold an election before entering into a funding contract with the state.
4. No, no other government agency will need to review or approve the funding agreement.
5. No litigation is pending that may impact the financial condition of the applicant, the operation of the water facilities, or its ability to complete the proposed project.

A-11 Operations and Maintenance

The District does not propose a construction project so this section will not be applicable.

Part B---Not Applicable

Part C—Plan for Completion of Environmental Documentation and Permitting Requirements

C-1 CEQA/NEPA

This project is NOT subject to CEQA or NEPA requirements.

C-2 Permits, Easements, Licenses, Acquisitions and Certifications

This project does NOT require any permits, easement rights, licenses, land acquisitions or certifications of approval from any federal, state or local agency.

C-3 Local Land Use Plans

This project will be subject to local land use plans and ordinances as passed by the Tahoe Regional Planning Agency and the Lahontan Regional Water Quality Control Board.

This project meets local and regional planning documents listed below:

- 1988 Water Quality Management Plan, also known as the 208 Plan, which was certified in 1989 by the U.S. Environmental Protection Agency, California State Water Resources Control Board and the Nevada Department of Conservation and Natural Resources
- TRPA's Goals and Policies, specifically, Chapter 4, Vegetation, Goal 1, Policy 6 and 8
- TRPA's Code of Ordinances, specifically, Chapter 25, Best Management Practices and Chapter 77, Re-vegetation

The goals, policies and ordinances listed above are available for review at www.trpa.org

C-4 Applicable Legal Requirements

There are no applicable legal requirements to implement and maintain this program.

Part D – Need for Project and Community Involvement

D-1 Need for Project

South Lake Tahoe is a unique community in terms of our population characteristics and the sensitive nature of the environment. The base population of the District's service area is approximately 46,886, however, these figures swell during peak tourist seasons to an estimated 1.8 million visitors per year. As the primary water service provider to residents and visitors in South Lake Tahoe, the District must always be prepared to meet fluctuating water demands. In 1996, when methyl tertiary butyl ether (MTBE) was discovered as a contaminant in the drinking water supply, the District lost over one-third of its production wells, or an estimated 25% of the total water supply. Although efforts to replace these losses – drilling new wells, water treatment plans, and water conservation measures-- have been successful, long-term efforts to reduce water demand are part of the District's goals.

Currently, the District operates 28 wells, 22 water storage tanks, 25 pressure reducing stations and 16 booster pump stations. There are no substitute supplies at this time. A

Firm Source Capacity Plan is being developed, to be completed January 2003, which describes the disparity between current water supplies and projected agency demands. Estimates at this time range between 1.5 to 2.1 MG of water per day, although firm numbers will not be reached until the plan is completed. As the deadlines for arsenic treatment grow closer, the District will also have to examine the need for either wellhead treatment or well closure for those wells above the acceptable range of U.S. Environmental Protection Agency arsenic levels.

The highest water demands are during the months of June, July and August when water production doubles and triples (See enclosed water production tables, Attachment D). While the District is aware that irrigation is the cause of this increase (See enclosed monthly water usage table for unaccounted water, Attachment A), according to Ivo Bergsohn, district hydrogeologist, the amount of unaccounted water is growing each year.

Tahoe Regional Planning Agency, in keeping with the mandates of the Porter-Cologne Act, introduced in 1999 a Best Management Practices (BMP's) Retrofit Ordinance, which mandates that all homeowners of the Tahoe Basin must take the necessary measures to help reduce run-off from leaving their property in order to reduce soil erosion and the eutrophication of Lake Tahoe. Water conservation efforts by the District must incorporate the land use requirements of TRPA. The District, in partnership with the Tahoe Resource Conservation District, needs to ensure that while meeting the BMP requirements, homeowners are also aware of water conservation practices. Although planting the entire property in lawn or sod will meet the requirements of the BMP ordinance for adequate vegetative cover and stabilized slopes, it also has the highest water demand. TRCD is able to offer homeowners information on native and adapted plants that are beneficial to Lake Tahoe's environment, as well as technical assistance in meeting the BMP's. As both TRCD and the District have water conservation and environmentally sound irrigation practices as agency goals, this project offers a beneficial partnership, as well as meeting a community need.

As is evidenced by the enclosed water production tables, water demand has increased, most especially in unaccounted water, or irrigation water. Impacts within the service area if this trend is not addressed would include an ever-increasing water demand vs. a limited supply and the need to develop new water supplies. As the cost to develop a new well from excavation to production can be as high as 1.5 million dollars, the continuation of increases in irrigation usage needs to be curtailed. This project, with the incentives and outreach plan included, can begin to help the district's customers understand that water conservation practices will save them money over the long-term as the customers must bear the costs of future water source development.

D-2 Outreach, Community Involvement, Support, Opposition

Tahoe Resource Conservation District is part of the Partners in Conservation group described in A-8 above. These agencies have jurisdiction or provide water services in adjacent areas to the District's service area. This group is a working subgroup of the Lake Tahoe Environmental Education Coalition. As this partnership meets monthly,

outreach through these agencies will be accomplished in the established meetings. Additionally, this partnership can provide technical assistance to the project on an ongoing basis and is very supportive of this project.

As described above, regional land use plans include Best Management Practices for homeowners, including landscaping requirements. This plan adheres to and enhances this regional ordinance, as well as meets the watershed goals of the Lahontan Regional Water Quality Control Board (LRWQCB). Lahontan adopted the Water Control Plan for the Lahontan region, also known as the Basin Plan, which established standards for water quality that apply to the Tahoe Basin. Additionally, Lake Tahoe is one of California's few designated Outstanding National Resource Waters (ONRW) under the Federal Anti-Degradation Regulation, 40-CFR, 1321.12 and 48 CFR 51402.

Outreach efforts for the community will be met by the following:

1. Media news releases describing the project
2. Flyers developed and included with quarterly billings from the District
3. Flyers sent to other billing agencies locally for inclusion
4. TRCD Backyard Conservation Program staff will provide outreach for the Water Conservation program during BMP evaluations
5. Information pamphlets will be distributed to all local conservation and water agencies

TRCD staff will receive training and employment through this project. Each client will receive an economic incentive to reduce water consumption and meet BMP requirements for the Tahoe basin, as well as training in water saving landscape maintenance and irrigation.

The district expects no potential third party impact from this project and no opposition.

Part E – Water Use Efficiency Improvements and Other Benefits

E-1 Water Use Efficiency Improvements

Irrigation practices in the Tahoe basin consume double and almost triple the water utilized during the winter months. Although irrigation water usage is a justifiable utilization, it is apparent that this type of water usage could be improved in terms of efficiency. Runoff and over-watering in landscaped areas is a common occurrence and one that the District would like to address through this landscaping incentive program. Soils in the basin tend to be sandy and non-porous, contributing to poor irrigation habits. The alpine climate, the acidity of the native pines, and a very-short growing season also contribute to difficulties in maintaining landscaping for homeowners. In general, living in the basin requires changes in landscaping choices and irrigation habits.

The net value of the beneficial use of water would be increased by this project due to some of the following factors:

The District would be providing the same customer base with water services, but this program would lower the total amount of MG utilized thereby increasing the value of the water provided, e.g., if the District serves 1000 customers with 100 MG of water at a specified rate, if the water provided were to be decreased, the net value of the water used increases due to the lowered costs associated with providing a lesser amount of water; lowering the need for water production and water usage rates provides for a greater environmental water supply reliability (please refer to Section D1 for discussions on MTBE and arsenic contamination).

E-2 Other Project Benefits

Environmentally, this project would benefit the specific land use goals and ordinances listed in Section C3 above, which include ecosystem restoration and water quality. Homeowners would benefit directly in the Best Management Practices (BMP's), which are required by TRPA to be implemented in years 2006 and 2011 respectively depending upon the area of residence. As landscaping, irrigation, and fertilizer practices are mandated specifically in this ordinance, homeowners would receive technical evaluations and economic assistance in bringing their lots into compliance. Water quality would be improved through the limited usage of fertilizer (native plants and grasses do not need the same kinds of fertilizer required by non-native species) and the limitation of over-watering and runoff, directly benefiting those agencies responsible for implementing such improvements, specifically TRPA and Lahontan, through the outreach measures and the implementation goals of this project.

Part F – Economics Justification: Benefits to Cost

F-1 Net Water Savings

The District proposes a reduction in water usage for homeowner irrigation. We know that the types of irrigation that occur in the Tahoe Basin are those that result in water losses to the atmosphere through evaporation or transpiration. In calculating net water savings, the annual water production amount for 2001 (included as Appendix C) of 2,632,49 MG was calculated into acre-feet (8077.60). We then divided the total number of water services provided (13,600) by the number of individual water services we plan on impacting with this program (300) for a percentage of .08. We estimated a 25% annual reduction in irrigation water usage by the 8% of individual homeowners who participate in the landscaping project for a total annual water savings of 16.15 acre feet. See documentation below:

Documentation for annual water saving calculations:

Annual water production/usage-- 2,632,490,000 mg

Translated to annual AF-- 8077.60 (1AF = 325,900 gallons)

100 annual services provided .8 percent of total service population (13,600)
(Expect to serve 300 customers over the 3-year project period)

.08 of annual AF-- 64.62 AF

25% water savings of annual 100 customers 16.15 AF

F-3 Economic Efficiency

The District will have a direct economic benefit in the long-term water use reduction and the cost savings associated with that reduction. As described in the needs section above, unaccounted water usage continues to rise annually and can be directly attributed to irrigation usage. If this trend continues, new water supply sources will need to be implemented. The costs associated with bringing a new domestic well from the planning to production stage are approximately 1.5 million dollars. If the District can successfully implement programs that result in water savings, especially in the area of irrigation usage, new water supply costs can be avoided. Additionally, any reduction in current water usage will save the district the costs of \$810.22 per acre-foot in water production.

Third party forms of direct economic benefits will be in the form of incentives and rebates to the homeowners participating in the program. The rebate limit, per individual homeowner, is a maximum of \$750.00 depending upon size of landscaped area, irrigation changes and techniques, and removal of turf areas. Condominium and apartment owners are also eligible for rebates per individual unit landscaped. Additional economic benefits to the project participants will be decreased water and fertilizer usage; decreased time on landscaping upkeep, and the associated environmental benefits.

<u>Tasks</u>	<u>Deliverable Items</u>	<u>Start Date</u>	<u>End Date</u>	<u>Estimated Costs</u>
Task 1: Administration/Training				
1.1 Recruit, interview and hire a Water Auditor for this program		Oct. 15, 2003	Nov. 30, 2003	\$ 4,075
1.2 STPUD/TRCD coordinate to design an effective flyer for advertising	Program flyer	Oct. 15, 2003	Nov. 15, 2003	\$ 1,700
1.3 Design and print application	Application	Oct. 14, 2003	Nov. 1, 2003	\$ 500
1.4 Develop landowner contracts	Contract	Oct. 14, 2003	Nov. 15, 2003	\$ 500
1.5 Meeting with TRCD/STPUD staff to discuss regulations, program requirements and staff duties		Nov. 30, 2003	Dec. 30, 2003	\$ 1,200
<u>Quarterly Cost estimates</u>				<u>\$ 7,975</u>
Task 1-- continued—second quarter				
1.6 Quarterly billing and grant reporting	Invoice, reports	Jan. 1, 2004	Jan. 30, 2004	\$ 250
<u>Quarterly Cost estimates</u>				<u>\$ 250</u>
Task 1-- continued—third quarter				
1.7 Attend yearly training on water auditing (Water Auditor)	Certification	April 1, 2004	May 15, 2004	\$ 500

1.8	Review completed applications, contact applicant, set pre-inspection date	Applicant list	May 15, 2004	June 30, 2004	\$ 3,375
1.9	Quarterly billing and grant reporting	Invoice, reports	April 1, 2004	April 30, 2004	\$ 250
	<u>Quarterly Cost estimates</u>				<u>\$ 4,125</u>

Task 1-- continued—fourth quarter

1.10	Process post-inspection approved payments	Incentive checks	July 1, 2004	Oct. 15, 2004	\$ 75,000
1.11	Continue processing applications	Applicant list	July 1, 2004	Oct. 1, 2004	\$ 3,375
1.12	Quarterly billing and grant reporting	Invoice, reports	July 1, 2004	July 30, 2004	\$ 250
1.13	Annual Report	Report	Oct. 1, 2004	Oct. 30, 2004	\$ 250
	<u>Quarterly Cost estimates</u>				<u>\$ 78,875</u>
	<u>Total Annual Costs, Task 1</u>				<u>\$91,225</u>

Task 2. Education and Outreach

	<u>Tasks</u>	<u>Deliverable Items</u>	<u>Start Date</u>	<u>End Date</u>	<u>Estimated Costs</u>
2.1	Circulate flyers for program in quarterly billings; distribute	Printed Flyers	Dec. 15, 2003	Dec. 30, 2003	\$ 1,000

to partner agencies and other interested groups

2.2	Develop and submit articles on program to media for publication and outreach	News Articles	Oct. 15, 2003	Dec. 30, 2003	\$ 1,000
2.3	Coordinate w/other private water companies in the area to promote the program through direct mailing in water bills		Oct. 15, 2003	Dec. 30, 2003	\$ 1,000
2.4	Coordinate w/TRCD's Backyard Conservation Program to promote this project through homeowner contacts and public workshops		Oct. 15, 2003	Dec. 30, 2003	\$ 1,000
<u>Quarterly Cost estimates</u>					<u>\$ 4,000</u>

Task 2 --continued-- second quarter

2.5	Continue tasks 2.1-2.4 above	Flyers and articles	Jan. 1, 2004	March 30, 2004	\$ 4,000
<u>Quarterly Cost estimates</u>					<u>\$ 4,000</u>

Task 2 --continued--third quarter

2.6	Continue tasks 2.1-2.4 above	Flyers and articles	April 1, 2004	June 30, 2004	\$ 4,000
<u>Quarterly Cost estimates</u>					<u>\$ 4,000</u>

Task 2 –continued—fourth quarter

2.7	Continue tasks 2.1-2.4 above	Flyers and articles	July 1, 2004	Sept. 30, 2004	\$ 4,000
	<u>Quarterly Cost estimates</u>				<u>\$ 4,000</u>
	<u>Total Annual Costs, Task 2</u>				<u>\$ 16,000</u>

Task 3. Implementation of Water Conservation Practices

<u>Tasks</u>	<u>Deliverable Items</u>	<u>Start Date</u>	<u>End Date</u>	<u>Estimated Costs</u>
3.1 Implement water saving landscape practices on 50-100 urban lots/year in the district		April 1, 2004	June 30, 2004	\$ 2,250
3.2 Provide landowner w/contact info for local nurseries and landscaping providers	Program discount coupons	April 1, 2004	June 30, 2004	\$ 500
3.3 Provide landowner info regarding local regulations affecting their landscape change (in accordance with TRPA erosion control regulations)	Informational Packets	April 1, 2004	June 30, 2004	\$ 500
3.4 Provide landowner with irrigation system info on drip systems and water saving devices for automatic sprinkler systems (can be part of rebate if purchased and installed by homeowner)	Informational Packets	April 1, 2004	June 30, 2004	\$ 500
	<u>Quarterly Cost estimates</u>			<u>\$ 3,750</u>

Task 3—continued-- second quarter (Note: this task will be performed only two quarters annually)

3.5	Continue tasks 3.1-3.4 above	Coupons and packets	July 1, 2004	Oct. 15, 2004	\$ 3,750
<u>Quarterly Cost estimates</u>					<u>\$ 3,750</u>
<u>Total Annual Costs, Task 3</u>					<u>\$ 7,500</u>

Task 4. Pre- and Post -Water Auditing/Monitoring/Evaluation

<u>Tasks</u>	<u>Deliverable Items</u>	<u>Start Date</u>	<u>End Date</u>	<u>Estimated Costs</u>
4.1 Purchase lap-top computer and software to establish evaluation and monitoring database for TRCD		Oct. 15, 2003	Dec. 30, 2003	\$ 2,600
4.2 Develop Site Inspection Data Worksheet	Site Inspection Worksheet	Nov. 1, 2003	Dec. 30, 2003	\$ 500
4.3 Develop criteria for soil collection and testing	Soil evaluation criteria	Oct. 15, 2003	Dec. 30, 2003	\$ 500
4.4 Establish annual unaccounted water usage to be used as comparison data for program evaluation	Annual unaccounted water use data	Oct. 15, 2003	Dec. 30, 2003	\$ 500
<u>Quarterly Cost estimates</u>				<u>\$ 4,100</u>

Task 4—continued--third quarter (note: this task to be performed three quarters annually)

4.5 Complete approximately 50 pre-and-post audits on homeowner applicant properties	Pre-and Post-Audits	April 1, 2004	June 30, 2004	\$ 1,117
4.6 Install approx. 50 rain gauges		May 15, 2004	June 30, 2004	\$ 1,667
4.7 Perform 5 soil tests (10 annually) based on criteria developed above	Soil test results	April 1, 2004	June 30, 2004	\$ 500
4.8 Data collection on homeowner water usage by TRCD staff	Precipitation/irrigation data	April 1, 2004	June 30, 2004	\$ 500
4.9 Take pre-and post-digital photos to provide visual land use data	Photo monitoring results	April 1, 2004	June 30, 2004	\$ 500
4.10 Enter completed site inspection and Irrigation information into database		May 1, 2004	June 30, 2004	\$ 500
<u>Quarterly Cost estimates</u>				<u>\$ 4,784</u>

Task 4—continued-fourth quarter

Continue task 4.5 listed above	Pre-and-post audits	July 1, 2004	Sept. 30, 2004	\$ 1,117
Continue task 4.6 listed above		July 1, 2004	Sept. 30, 2004	\$ 1,667
Continue task 4. 7 listed above	Soil test results	July 1, 2004	Sept. 30, 2004	\$ 500

Continue task 4.8 listed above		July 1, 2004	Sept. 30, 2004	\$ 500
Continue task 4.9 listed above		July 1, 2004	Sept. 30, 2004	\$ 500
Continue task 4.10 listed above		July 1, 2004	Sept. 30, 2004	\$ 500
4.11 Provide landowner with evaluation of results	Property evaluations	Sept. 1, 2004	Oct. 15, 2004	\$ 800
4.12 STPUD to compare annual water usage and production, unaccounted water annually and establish percentage differences	Water comparison tables specific to project			\$ 1,313
4.13 TRCD and STPUD to provide DWR with annual evaluation of results	Evaluation data	Nov. 30, 2004		\$ 350
Quarterly Cost estimates				\$ 7,247
Total Annual Costs, Task 4				\$ 16,131
Total Annual Project Costs for All Tasks				\$130,856

*****Final Report – to be prepared at the end of the three-year funding period provided for by DWR. Also to be publicized in appropriate journals and newsletters to include:**

A brief introduction section including a statement of purpose, the scope of the project, and a description of the approach and techniques used during the project. A determination of whether the purposes of the project have been met, as well as the effectiveness of the water auditing and data collection measures implemented on reducing water in urban landscapes will be included. The final report shall include the results of the tasks listed above.

F-2 Project Budget

	<u>Annual</u>	<u>Project Term</u>
<u>a) Land Purchase/Easement</u>		
Not applicable		
<u>b) Planning, Design, Engineering</u>		
Program Coordinator (TRCD) 88 hours for initial planning, oversight, design of program (\$25.00 per hour includes benefits)	\$ 2,200	\$ 2,200
Project Manager (STPUD) 100 hours for initial planning, oversight, design of program including flyers, advertising, evaluation (\$35.00 per hour + 33% benefits/	\$ 4,655	\$ 4,655
Irrigation Auditor (TRCD) 60 hours for initial planning and training on program (\$15 per hour includes benefits)	\$ 900	\$ 900
Reception staff (STPUD) 15 hours each staff (x4) for initial training on program requirements, application forms, etc. (\$20.00 per hour + 33% benefits)	\$ 1,596	\$ 1,596
Postings (Newspaper/Internet)	\$ 200	\$ 600
Training Courses, irrigation auditor	\$ 350	\$ 1,050
<u>TOTAL</u>	<u>\$ 9,901</u>	<u>\$ 11,001</u>

	<u>Annual</u>	<u>Project Term</u>
<u>c) Materials/Installation</u>		
Landscape Auditor Kit (One-time purchase with instruments necessary to perform landscaping evaluations)	\$ 500	\$ 500
Rain Gauges (To be installed with each audit to measure precipitation amounts and be utilized as an irrigation training technique for homeowners, as well as evaluation and monitoring tool, 1 per lot, 100 annually)	\$ 3,334	\$ 10,000
<u>TOTAL</u>	<u>\$ 3,834</u>	<u>\$ 10,500</u>
<u>d) Structures</u>		
Not applicable		
<u>e) Equipment Purchases/Rentals</u>		
Laptop computer and associated hardware (Irrigation auditor can utilize while performing pre-and-post audits, analyzing rain gauge data, storing evaluation data, etc.)	\$ 2,600	\$ 2,600
Digital Camera (Irrigation auditor can utilize for pre-and post inspections, landscape audits, and download directly into laptop computer while on site.)	\$ 500	\$ 500
<u>TOTAL</u>	<u>\$ 3,100</u>	<u>\$ 3,100</u>

	<u>Annual</u>	<u>Project Term</u>
<u>f) Environmental Mitigation/Enhancement</u>		
Not applicable.		
<u>g) Construction/Administration/Overhead</u>		
Program Coordinator (TRCD) (67 hours x \$25.00 per hour includes benefits) Annual oversight of Irrigation Auditor and review of project evaluation data and reporting	\$ 1,667	\$ 5,000
Project Manager (STPUD) (100 hours x \$35.00 per hour +33% benefits) Responsible for meeting all program requirements, oversight of monitoring and data collection, reporting, etc	\$ 4,655	\$ 13,965
Irrigation Auditor (TRCD) (880 hours x \$15.00 per hour includes benefits) See Scope of work and task list for a description of duties	\$ 13,200	\$ 39,600
Reception staff (STPUD) (120 hours x \$20.00 +33% benefits) Responsible for sending applications, stuffing billings w/flyers, Answering questions about program, all front-line activities	\$ 3,192	\$ 9,576
Finance staff (STPUD) (75 hours x \$25.00+33% benefits) Processing, tracking and mailing 100 incentive checks	\$ 2,494	\$ 7,482
Soil Testing Performed based on soil testing criteria developed during planning stages—no more than 10 per year	\$ 1,000	\$ 3,000

	<u>Annual</u>	<u>Project Term</u>
Bookkeeper (TRCD) (24 hours x \$25.00 includes benefits)	\$ 600	\$ 1,800
Overhead (TRCD) (Telephone, copying, postage, vehicle mileage)	\$ 4,813	\$ 14,439
Overhead (STPUD) (Telephone, copying, postage, etc.)	\$ 7,400	\$ 22,200
<u>TOTAL</u>	<u>\$ 39,021</u>	<u>\$ 117,062</u>

h) Project Legal/License Fees

Not applicable

i) Other

Incentive Fees (\$750 per 100 clients—one time rebate only) Incentives will be based on square foot of landscaping, irrigation techniques used, and other contractual obligations as outlined in the program guidelines	\$ 75,000	\$ 225,000
<u>TOTAL</u>	<u>\$ 75,000</u>	<u>\$ 225,000</u>

<u>TOTAL PROJECT COSTS:</u>	<u>\$ 130,856</u>	<u>\$ 336,663</u>
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Applicant:

THE TABLES ARE FORMATTED WITH FORMULAS: FILL IN THE SHADED AREAS ONLY

Table 1: Capital Costs

	Capital Cost Category (a)	Cost (b)	Contingency Percent (c)	Contingency \$ (d) (bxc)	Subtotal (e) (b+d)
(a)	Land Purchase/Easement			0	0
(b)	Planning/Design/Engineering	11,001	0.00%	0	11,001
(c)	Materials/Installation	10,500		0	10,500
(d)	Structures			0	0
(e)	Equipment Purchases/Rentals	3,100	0.00%	0	3,100
(f)	Environmental Mitigation/Enhancement			0	0
(g)	Construction/Administration/Overhead	117,062	0.00%	0	117,062
(h)	Project Legal/License Fees			0	0
(i)	Other	225,000		0	225,000
(j)	Total (1) (a + ... + i)				366,663
(k)	Capital Recovery Factor: Use Table 6				0.1359
(l)	Annual Capital Costs (j x k)				49,830

(1) Costs must match Project Budget prepared in Section F-2.

Applicant:

Table 2: Annual Operations and Maintenance Costs

Administration (a)	Operations (b)	Maintenance (c)	Other (d)	Total (e)
39,571	75,000	0		114,571

Table 3: Total Annual Costs

Annual Capital Costs (1) (a)	Annual O&M Costs (2) (b)	Total Annual Costs (c) (a+b)
49,830	114,571	164,401

(1) From Table 1, line (l)

(2) From Table 2, column (e)

Applicant: South Tahoe Public Utility District

Table 4: Water Supply Benefits
(2002 Dollars)

Net water savings (acre-feet/year) _____ 16.15

4a. Avoided Costs of Current Supply Sources

Sources of Supply (a)	Cost of Water (\$/AF) (b)	Annual Displaced Water Supply (AF) (c)	Annual Avoided Costs (\$) (d) (b x c)
Domestic Wells	810.22	16.15	13085.053
			0
			0
			0
			0
Total			13085.053

4b. Alternative Costs of Future Supply Sources

Future Supply Sources (a)	Total Capital Costs (\$) (b)	Capital Recovery Factor (1) (c)	Annual Capital Costs (\$) (d) (bxc)	Annual O&M Costs (\$) (e)	Total Annual Costs (\$) (f) (d+e)
Develop new well	1,500,000	0.1359	203,850		203,850
			0		0
			0		0
			0		0
			0		0
Total					203,850

(1) Use number from Capital Recovery Factor Table 6

4c. Water Supplier Revenue (Vendability) Not Applicable

Parties Purchasing Project Supplies (a)	Amount of Water to be Sold (AF) (b)	Selling Price (\$/AF) (c)	Expected Frequency of Sales (1) (%) (d)	Expected Selling Price (\$/AF) (e) (cxd)	"Option" Fee (2) (\$/AF) (f)	Total Selling Price (\$/AF) (g) (e+f)	Annual Expected Water Sale Revenue (\$) (h) (b x g)
				0		0	0
				0		0	0
				0		0	0
				0		0	0
				0		0	0
Total							0

(1) During the analysis period, what percentage of years are water sales expected to occur?

For example, if water will only be sold half of the years, enter 50% (0.5).

(2) "Option" fees are paid by a contracting agency to a selling agency to maintain the right of the contracting agency to buy water whenever needed. Although the water may not be purchased every year, the fee is usually paid every year.

Table 4d. Total Water Supply Benefits

(a) Annual Avoided Costs of Current Supply Sources from 4a, column (d)	13,085
(b) Annual Avoided Costs of Alternative Future Supply Sources from 4b, column (f)	203,850
(c) Annual Expected Water Sale Revenue from 4c, column (h)	0
(d) Total Net Annual Water Supply Benefit (\$) (a+b+c)	216,935

Applicant: South Tahoe Public Utility District

Table 5: Benefit/Cost Ratio

Project Benefits (\$)(1)	216,935
Project Costs (\$)(2)	164,401
Benefit/Cost Ratio	1.32

(1) From Table 4d, row (d): Total Annual Water Supply Benefits

(2) From Table 3. column (c): Total Annual Costs

Table 6: Capital Recovery Table

Life of Project (in years)	Capital Recovery Factor
7	0.1791
8	0.1610
9	0.1470
10	0.1359
11	0.1268
12	0.1193
13	0.1130
14	0.1076
15	0.1030
16	0.0990
17	0.0954
18	0.0924
19	0.0896
20	0.0872
21	0.0850
22	0.0830
23	0.0813
24	0.0797
25	0.0782
26	0.0769
27	0.0757
28	0.0746
29	0.0736
30	0.0726
31	0.0718
32	0.0710
33	0.0703
34	0.0696
35	0.0690
36	0.0684
37	0.0679
38	0.0674
39	0.0669
40	0.0665
41	0.0661
42	0.0657
43	0.0653
44	0.0650
45	0.0647
46	0.0644
47	0.0641
48	0.0639
49	0.0637
50	0.0634